

THE HALTON BOARD OF EDUCATION

OFFICE OF THE DIRECTOR OF EDUCATION

1989 01 12

Rpt. # 45

TO THE CHAIR AND MEMBERS OF
THE HALTON BOARD OF EDUCATION

RE: ENVIRONMENTAL HYPERSENSITIVITY

1. Introduction

Air pollution in schools and the hypersensitivity of some students to environmental conditions is of increasing public concern. The frequency of complaints about the quality of air in the workplace environment has increased in many sectors: industrial, private, and public, including schools and school Board offices. Recent newspaper articles point to classrooms in neighbouring Boards with CO2 levels that are much higher than what is considered acceptable. Local parents of children who have been diagnosed as Environmentally Hypersensitive (E.H.) have been advocating for their children's needs for the past three years. These parents, in order to accommodate their children, have had to make many changes to their homes and their lifestyles. Many of them have made considerable sacrifices in their attempt to keep their children healthy and they expect the schools to cooperate with their efforts.

2. Background

2.1 Definition of Environmental Hypersensitivity.

Environmental Hypersensitivity (E.H.) is the name given to an ill-defined condition characterized by multiple sensitivities to a wide range of foods, chemicals and environmental substances. Individuals with E.H. have adverse reactions to allergy provoking substances at levels far below that which is considered to be the usual threshold. The provoking substances vary from individual to individual, as do the reactions to these substances. The reactions experienced include physical signs and symptoms (e.g., dizziness, nausea, hives, headaches) and emotional-mental symptoms (e.g., poor concentration, hyper-activity, depression).

2.2 E.H. Steering Committee. In response to a brief submitted to the Board's Special Education Advisory Committee (S.E.A.C.) by the local chapter of the Advocacy Group for the Environmentally Sensitive (A.G.E.S.) in 1985, a fact-finding Steering Committee was formed in April of 1986. (Appendix A) During the past two years, this Committee has researched and studied the issues, taken initiatives and conducted a system-wide survey.

3. Summary of Steering Committee Findings

3.1 Reported Prevalence

An Environmental Hypersensitivity Survey (Appendix B) was sent to all schools in January, 1988.

3.1.1 Results of Survey

Total number of schools surveyed	82
Total number of schools responding	59
Total number of students reported to be medically diagnosed as Environmentally Hypersensitive	21
Total number of schools involved with diagnosed E.H. students	14

3.1.2 Distribution of reported cases and rate of absenteeism

<u>School</u>	<u># Stds.</u>	<u>Gr.</u>	<u>Days Absent in 4 Months</u>
Nelson	3	10	8
		9	4
		9	3
M.M.R.	1	10	20
Elgin	2	9	1
		8	Home Inst. (full time)
Brock	2	Sr.D.	27
		Sr.D.	Home Inst. (full time)
O.T.H.S.	1	9	15
L.B. Pearson	1		
E.J. James	1	6	30
Pineland	2	2	14
		3	14
Pauline Johnson	1	2	7
New Central	1	8	9
J.T Tuck	3	Kdgn.	6
		7	Home Inst. (part time)
		2	5.5
Fairfield	1	5	Home Inst. (full time)
Jos. Gibbons	1	T.M.H.	
Champlain	1	Kdgn.	9

Although some of these students experienced little absenteeism their parents believe that their school grades have suffered considerably as a result of reaction to the environment.

- 3.2 Estimated Prevalence. Since only those students who have been seen by a clinical ecologist would be medically diagnosed as hypersensitive it is likely that the prevalence of E.H. students is greater than the number reported in this survey.

Also, it is recognized that students with severe allergies and asthma are sensitive to the environment and that their learning may be adversely affected by contaminants normally found in a school setting.

- 3.3 Interventions to Date. The following is a list of strategies that have been utilized to assist known E.H. students to cope in their regular classroom environment. (Example cases in Appendix C)

- . use of non-irritant cleaning materials
- . special and additional dusting and cleaning practices
- . removal of materials which could contribute to the retention of dust, molds, bacteria, etc. (area rugs, etc.)
- . providing additional storage facilities for materials (e.g., paint, glues, construction paper)
- . installing portable air filtering apparatus
- . installing fans and additional filters in air intake systems
- . scheduling maintenance repairs and painting to minimize effect
- . substituting instructional supplies with less irritant materials.
- . modifying child's program to avoid exposure to certain chemicals
- . providing home instruction as a last resort to prevent ill health
- . held new carpets in storage until irritant fumes had dissipated

3.4 Initiatives of Other Boards

3.4.1 Waterloo Board of Education

development of 2 environmentally clean classrooms to accommodate E.H. high school students

provision of extensive inservice to staff and community on the nature of E.H.

3.4.2 Toronto Board of Education

publication of a report Recommendations for Action on Pollution and Education

development of protocol entitled Total Building Performance Approach (August, 1987)

actively researching design and materials to bring relief to schools experiencing higher pollution levels

- 3.5 Inservice to Staff. Special Education Services sponsored two workshops on E.H. for Principals, Support Staff, Maintenance Supervisors and Public Health Nurses

Several Professional Development workshops were presented to teachers by Parent Advocates of students who are Environmentally Hypersensitive.

- 3.6 Ministry of Health. The Ministry of Health has published two recent reports on the subject: Report of the Ad Hoc Committee on ENVIRONMENTAL HYPERSENSITIVITY DISORDERS, Thompson (1985), and a critique of this report: ADVISORY PANEL ON ENVIRONMENTAL HYPERSENSITIVITY, Zimmerman (1986).

There is considerable controversy within the medical profession as to the etiology of the symptoms associated with Environmental Hypersensitivity and many traditional medical specialists question the methodology and treatment practices of Clinical Ecologists.

The Ministry of Health has taken the position that objective and sophisticated research is necessary in order to address the many concerns in this area and it has called for proposals in this regard.

4. Summary

The following observations are the result of two years' of accumulated findings and point to a need for both immediate action and long-term planning in this area.

- . The physical symptoms and their associated stress, which Clinical Ecologists attribute to environmental irritants, impair the ability of a significant number of students to learn.
- . In many cases, it is possible to alleviate this condition by prescribing medication and by making modest environmental modifications.

- . In some cases, more intrusive measures must be taken and specialized services applied in order to maintain an acceptable learning environment.
- . Secondary schools represent the most threatening environment for E.H. students in both a physical and psychological sense. Shops, Science labs, largeness, peer pressure and psychological alienation work together to create substantial obstacles to effective learning. For the severe cases, individual accommodation is usually economically prohibited and often only leads to further alienation.
- . Rotary programming at the senior elementary school level makes environmental modifications for individual students extensive and costly. It is logistically not possible to coordinate maintenance and construction schedules in more than 2 or 3 schools at one time.
- . The Waterloo Board's classrooms have demonstrated their success at returning environmentally ill students to school and eventually reintegrating them into the mainstream.
- . Parents of students attending the Waterloo Board of Education's "clean" facility have supported the initiative by providing acceptable transportation i.e. taxis and school buses are not acceptable environments for some students.
- . The Toronto Board of Education has offered to share its extensive research in this area and invites other Boards to join its endeavour to get the appropriate ministries and agencies involved and to become active with regard to pollution in the environment.
- . It is estimated that at a mild level the ability of a significant percentage of Halton students to learn, may be adversely affected by exposure to chemical and other contaminants which are normally found in the school environment.

5. Action Plan

5.1 Special Procedures

5.1.1 Establish three area Environmental Resource Teams

Membership

Area Psychologist
 Area Maintenance Supervisor
 Public Health Nurse Representative

Terms of Reference

- . assist the School Resource Team and the parents in assessment of concerns and in development of appropriate intervention strategies for students who are suspected to be environmentally hypersensitive.
- . liaison with Coordinator of Special Services and Supervisor, Plant Operations and Facilities Maintenance
- . maintain a file on all students in their area who are environmentally hypersensitive.

5.1.2 Establish a Regional Environmental Resource Team

Membership

Coordinator of Special Services
Supervisor, Plant Operations and Facilities Maintenance
Medical Officer of Health Supervisor
Supervisor, Regional Health Department

Terms of Reference

- . assist in the assessment of needs and in the development of individual programs where school and area intervention have been demonstrated to be insufficient
- . liaison with representatives of parents of students with environmental hypersensitivities
- . keep a regional file on all students who are diagnosed environmentally hypersensitive.
- . present semi-annual reports to the Steering Committee on Environmental Hypersensitivity

5.2 Intervention

DECISION-MAKING MODEL FOR STUDENTS SUFFERING FROM ENVIRONMENTAL HYPERSENSITIVITIES

LEVEL OF INTERVENTION	RESPONSIBILITY FOR ASSESSMENT OF NEEDS	INTERVENTION	RESPONSIBILITY FOR INTERVENTION DECISION
Discrete	School Resource Team, parent	Classroom level - adjustment to program, timetable, use of materials, etc. Incidental cost.	Principal
Mild	School Resource Team, parent, medical doctor Area Environmental Resource Team	Classroom or school modification which would involve specialized services, e.g., air purifying pumps	Principal, F.O.S. Superintendents
Moderate	School Resource Team, parent, medical doctor, Area Environmental Resource Team,	Transfer to a more appropriate school or classroom	F.O.S. I.P.R.C.
Severe	School Resource Team, parent, medical doctor, Area Environmental Resource Team, Regional Environmental Resource Team	Transfer to an environmentally clean classroom	Regional I.P.R.C.
Extreme	School Resource Team, parent, medical doctor, Area Environmental Resource Team, Regional Environmental Resource Team	Home Instruction or Purchase of Service	Regional I.P.R.C.

5.3 Long-Term Planning

- 5.3.1 Conduct an investigation to determine school-safe materials and activities
- 5.3.2 In cooperation with other agencies, continue research on the impact of pollution and chemical sensitivity on learning and behavioural modifications
- 5.3.3 Continue active participation in the Ontario Inter-agency Working Group on Pollution and Education.

5.4 Immediate Action

- 5.4.1 Establish a 1989 budget of \$15,000 to accommodate the research, purchase and evaluation of low pollution materials and furnishings to accommodate the needs of Environmentally Hypersensitive students in regular schools
- 5.4.2 Designate one elementary school (with an intermediate division) in each area where discrete and mild environmental modification could be made as required to accommodate students identified as environmentally hypersensitive.

Example:

- special maintenance scheduling
- use of less offensive products for cleaning, instruction and maintenance

- 5.4.3 Using the Waterloo model as a prototype, establish an environmentally clean classroom at the secondary school level. (Appendix D)

Based on information from the Waterloo classroom it is estimated that the following are approximate costs involved in establishing an "ecologically clean" classroom.

Option A

Conversion of existing classroom in order to make it "ecologically clean"	\$25,000 to \$30,000 depending on size of facility and location within the school
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Type

Costs

Option B

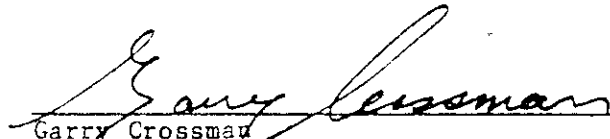
A specially constructed portable to meet the needs of environmentally sensitive students. \$40,000

RECOMMENDATION

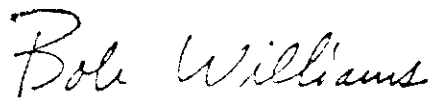
It is recommended:

THAT the Halton Board of Education approve the Action Plan as stated in this report subject to the budget process.

Respectfully submitted,


Garry Crossman
Superintendent of
Special Education Services

Approved by:


Bob Williams
Director of Education

E.H. STEERING COMMITTEE

MEMBERSHIP

Dan Dalton	Special Education Services (Chair)
Kathy Gilbert	Public Health Nurse
George Luce	Support Staff
Lillian More	Elementary Principals' Association
Bill Robinson	Secondary Principals' Association
Klaus Rerup	Purchasing Agent
Bert VanLierop	Supervisor, Plant Operations and Facilities Maintenance

Resource Members

Garry Crossman	Superintendent, Special Education Services
Harley Lishman	Assistant Superintendent, Business Services - Plant
Graham Pollett	Medical Officer of Health

ACTIVITIES

- . established a series of regular liaison meetings with representatives of parents of E.H. students
- . established a regional resource team to assist schools in responding to the needs of E.H. students
- . established a liaison with the Interboard Committee "Working Group on Pollution and Schools"
- . visited the specialized clean classrooms of the Waterloo Board
- . researched literature on the subject including recent government reports: Report of the AD HOC COMMITTEE ON ENVIRONMENTAL HYPERSENSITIVITY DISORDERS (Ministry of Health, 1985) and Report of the ADVISORY PANEL ON ENVIRONMENTAL HYPERSENSITIVITY (ministry of Health, September 1986)
- . provided inservice to Principals and Support Services staff on the topic of Environmental Hypersensitivity
- . presented a progress report to Academic Council in June, 1987
- . conducted a survey of all schools to determine the prevalence of E.H. students within the system
- . field tested two brands of air filters which are currently on the market
- . conducted a two year study of intervention for one student in two classrooms


THE HALTON BOARD OF EDUCATION

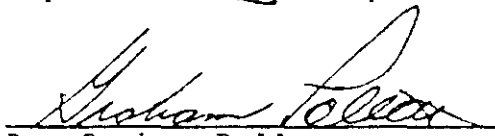
TO: All School Principals
FROM: Garry Crossman and Dr. Graham Pollett
RE: ENVIRONMENTAL HYPERSENSITIVITY SURVEY

The Environmental Hypersensitivity Study Committee requests your assistance in determining the number of students with Environmental Hypersensitivity within the school system.

Environmental Hypersensitivity (E.H.) is the name given to an ill-defined condition characterized by multiple sensitivities to a wide range of foods, chemicals and environmental substances. Individuals with E.H. have adverse reactions to allergy provoking substances at levels far below that which is considered to be the usual threshold. The provoking substances vary from individual to individual, as do the reactions to these substances. The reactions experienced include physical signs and symptoms (e.g., dizziness, nausea, hives, headaches) and emotional-mental symptoms (e.g., poor concentration, hyper-activity, depression).

We ask that you complete the attached questionnaire in consultation with your School Nurse and your staff. The confidential information collected will assist the E.H. Study Committee in its task of recommending to staff the best approach to take in dealing with the E.H. student.


Garry Crossman
Superintendent of Special Education Services


Dr. Graham Pollett
Commissioner and Medical Officer of Health
Halton Regional Health Department

Attachment

ENVIRONMENTAL HYPERSENSITIVITY SCHOOL SURVEY QUESTIONNAIRE

NAME OF SCHOOL _____

ELEMENTARY _____ SECONDARY _____

NAME OF PRINCIPAL _____

NAME OF VICE-PRINCIPAL(S) _____

NAME OF SCHOOL NURSE _____

1. Presently, how many students with Environmental Hypersensitivity are attending your school? _____

(A) Of these students, how many are medically diagnosed? _____

(B) Of these students, how many are on home instruction? _____

2. For each student indicated in question 1, please complete the attached chart.

3. Has your school made any change to accommodate children with Environmental Hypersensitivity?

YES _____ (Go to Question 5)

NO _____ (End of Questionnaire)

4. If yes, please specify changes made.

5. In your opinion, do you think these changes were effective?

YES _____ (Go to Question 7)

NO _____ (End of Questionnaire)

6. If yes, please specify.

Thank you for completing the questionnaire. Please return by JANUARY 27, 1988 to:

Dan Dalton
Coordinator - Special Services
J.W. Singleton Education Centre

FOR SCHOOL YEAR 1987-88

[illegible]

** PROVOKERS - substances within the environment known to precipitate or exacerbate the condition.

MEMO

TO; Dan Dalton

FROM: Chuck McDonald

Re: Construction odours and the environmentally sensitive

PROBLEM: The negative pressure in the original building caused by the ventilating system draws air with paint odours and odours caused by the propane heaters from the new gym addition presently under construction.

Attempts to Minimize Impact:

- . I met with parents of an E.H. student during the week of December 14 to respond to questions re: the remaining chemical hazards that could be expected.
- . The contractor had already installed a plastic barrier to reduce infiltration by sealing the linking corridor.
- . We inspect this barrier daily and require repairs to be made by the contractor when damage occurs.
- . We sealed the space below the new doors in the junior gym with rolled blankets.
- . We identified the problem (as specified above) at the January 6th job site meeting and the mechanical contractor suggested that the General Contractor start up the exhaust fan on the roof of the addition to equalize pressure. (They went off together to check this out following the meeting).
- . At the same site meeting I asked that the corridor painting be done with Benjamin-Moore Low Odour Alkyd paint.
- . I called Reg Irish the next day to ask that this be confirmed with the contractor.
- . We'll ask that the same product be used when the staff room renovations are undertaken.
- . We cannot avoid the urethane varnish problem for the gym floors, nor can we schedule varnishing later as we have bookings in January and our whole junior school has no phys. ed. program until the new gym has been completed. We will however seal them off as effectively as possible until the urethane is dry.
- . We have taped the gym doors shut.

PINELAND PUBLIC SCHOOL

	GENERAL PRACTICE	MODIFICATIONS
1. Radiators	<ul style="list-style-type: none"> - vacuum with cover on, on a yearly basis - dusted daily 	<ul style="list-style-type: none"> - remove cover and vacuum during summer - dusted daily and vacuumed once a month with cover on
Lights	<ul style="list-style-type: none"> - cleaned and washed during summer clean-up 	<ul style="list-style-type: none"> - clean and wash at Christmas and Spring Break - run dust mop over lights once a month
Curtains	<ul style="list-style-type: none"> - dry cleaned once a year (check if can be washed) 	<ul style="list-style-type: none"> - vacuum clean Christmas & March Break
Carpets	<ul style="list-style-type: none"> - generally cleaned daily (carpet sweeper) 	<ul style="list-style-type: none"> - vacuum every day. Steam clean once a year
Floors	<ul style="list-style-type: none"> - dry mopped every day 	<ul style="list-style-type: none"> - omit Misto - No chemicals - dry mopped every day
Unnecessary Equipment		<ul style="list-style-type: none"> - will be removed or covered with cotton
2. Paints Markers Glue		<ul style="list-style-type: none"> - add baking soda to paint - jars with lids - put cover over
Airing of Dittos	<ul style="list-style-type: none"> - done on a daily basis 	<ul style="list-style-type: none"> - aired in separate room (2 or 3 days) - use copier when short of time

PINELAND PUBLIC SCHOOL

GENERAL PRACTICE

MODIFICATIONS

2.	Pesticide or Herbicide Grass cutting	- Parks and Recreation to phone schedule to school first - Roy will request	
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3.	Food Awareness	- when food is a part of a lesson or celebration it is offered to all students. They may refuse to take if they wish	- when food planned notes will go home - keep food in fridge as substi- tute - phone parent when planning
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The Waterloo County Board of Education

Education Centre
51 Alder Avenue
Box 66
Kitchener, Ontario
N2G 3Y5

(519) 742-1751
Cambridge GALT
Zeph 91630

SPECIAL ENVIRONMENTALLY SENSITIVE CLASSROOM

Due to allergic reactions by some students to the normal school environment, the Special Education Division provided research data indicating the problem of spacial contaminants. To reduce or eliminate these contaminants, the following list of materials is established:

The finishes of this room shall not contain any plastics of any kind nor any petroleum base finishes. Airborne dust and creation of obnoxious fumes shall be eliminated or reduced as much as possible.

It will be necessary that all occupants entering the room wear clothing free of contaminants as well as allergy free grooming solutions and do not smoke, etc.

A. SPECIAL FINISHES

1. DOOR

Plastic laminate corridor side only (if desired) inside of door shall be wood with two (2) coats Crystal Air Sealer (Wimdegroot Organic Foods, Mississauga).

2. HOLLOW METAL FRAMES

Two (2) coats of pure latex paint.

3a. FLOOR

Concrete floor sealed with coloured non-plastic, non-oil sealer

OR

Quarry tile with non-allergenic adhesive and grout

.....Page 2

Special Environmentally Sensitive Classroom ... (Continued)

b. WOOD BASE

Shall be of solid wood construction only. Finish all surfaces with three (3) coats of Crystal Air Sealer.

4. CEILING TILES

Sealed before installation with one (1) coat of clear, pure latex.

5. MILLWORK

Shall be of solid wood construction only. Finish all surfaces with three (3) coats of Crystal Air Sealer.

6. ADHESIVES

All glue/adhesives used for millwork, tackboards, mortar boards, etc., shall be vegetable or mineral base.

7. CAULKING

Caulking around doors and windows etc., shall be of mineral base putty.

8. CONCRETE BLOCK ABOVE CEILING

All exposed masonry shall be sealed with one (1) coat of pure latex paint to under side of steel deck.

9. LIGHT FIXTURES (FLUORESCENT)

Metal box shall be painted with two (2) coats of pure latex paint glass lens (no plastic). Porcelain sockets.

10. MECHANICAL DIFFUSERS

Aluminum - no paint or lacquer.

11. THERMOSTAT

Metal Construction.

.....Page 3

Special Environmentally Sensitive Classroom ... (Continued)

12. SWITCHES AND RECEPTACLES

Nylon.

13. ELECTRICAL WIRE

Shall be totally enclosed and sealed at conduit ends.

14. ELECTRICAL COVERPLATES

Shall be brushed stainless steel or chrome.

15. CLOCK

Shall have metal body and be painted with two (2) coats of pure latex paint, class cover faces only.

16. INTERCOM GRILLE

Shall be painted with two (2) coats of pure latex paint.

17. TELEPHONE

Shall be nylon.

19. MARKER BOARDS

Shall be used in lieu of chalkboards (for water-based pens).

20. SEAL BETWEEN PARTITION AND CEILING/ROOF DECK

Pure latex foam from Ontario Rubber, 19 Constellation Crescent, Toronto, Ontario.

Paints and finishes shall be free of any petroleum additives. Thinners used shall be non-petroleum spirits only.

Special Environmentally Sensitive Classroom ... (Continued)

B. ENVIRONMENT (AIR) CONTROL

1. Provide cooling for humidity and temperature control.
2. Provide electronic air filtering on a re-circulation basis, (and possibly air supply). Also provide a HEPA filter.
3. Filter as best as feasible* a limited amount of mechanically introduced fresh air (based on the number of students and tasks). Air must be drawn from non-polluted location. "Fresh air may have to go through electronic filter.

* depends on heating unit.

4. Fan to be the type such as Universal Eradicatain.

D.R. Foell,
Superintendent of
Planning and Construction
Physical Resources.

Revised Sept. 1987.